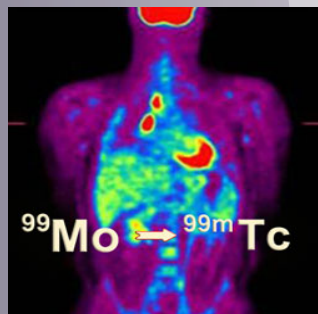
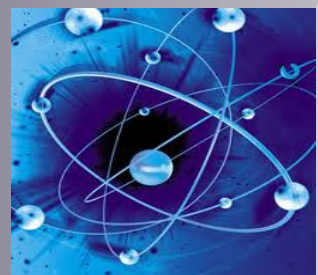
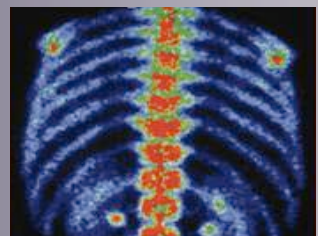


# New Online Information Service for the National Isotope Development Center

Michael Smith  
ORNL Physics Division

Eric Lingerfelt  
ORNL Computer Science  
and Mathematics Division



- started project January 14
- **extracted** product catalog from old FOX PRO database
- **configured database workstation** to work on ORNL network
- **created** new MySQL **database** and imported data
- data is now stored **securely & redundantly**
- requested **new domain** “isotopes.gov” for website (just approved)
- **created** new NIDC logo



- created static web pages with information on NIDC and isotopes

**NIDC** NATIONAL ISOTOPE  
DEVELOPMENT CENTER

the government source of  
isotopes for science,  
medicine, security, &  
applications

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Open Solicitation for DOE National Labs [LAB 11-448]: R&D on new/improved isotope production/processing technologies due 4/18/2011

### Welcome to the NIDC !

The **National Isotope Development Center (NIDC)** interfaces with the User Community and manages the coordination of isotope production across the facilities and business operations involved in the production, sale, and distribution of isotopes. Located at Oak Ridge National Lab (ORNL) in Oak Ridge, TN, the NIDC is funded out of the **Isotope Development and Production for Research and Applications (IDPRA)** subprogram of the **Office of Nuclear Physics** in the **U.S. Department of Energy Office of Science**.

Please visit the links in the navigational bar above for the [online isotope catalog](#), for [detailed information on the isotopes](#), for [more information on the NIDC](#), and much more.

You can contact the NIDC via email at [isotopes@ornl.gov](mailto:isotopes@ornl.gov).

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### Request for Quotations

The **Isotope Business Office** processes all requests for quotations for products listed in the **Online Catalog**. At the present time, **online orders** without prior communication with the **Isotope Business Office** are not being accepted.

#### Quotes for Isotope Products except <sup>3</sup>He

To request a quote on all of our isotope products **except <sup>3</sup>He**, please contact the IBO at the address given below. We will soon enable an online form to process your request.

Although we are not processing online orders, you may view the U.S. Department of Energy Isotope and Technical Service Order

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### Isotope Production Sites

The Isotope Development and Production for Research and Applications (IDPRA) Program in the DOE Office of Nuclear Physics has stewardship over the Brookhaven Linear Isotope Producer (BLIP) Facility at BNL, the Isotope Production Facility (IPF) at LANL, as well as hot cell facilities for processing isotopes at ORNL, BNL and LANL. Additionally, they support the production of isotopes at a number of other facilities including the High Flux Isotope Reactor (HFIR) at ORNL, PNNL, ATR at INL, the Tritium Facility at SRNL. There are also three new pending opportunities at Washington University, MURR at University of Missouri, and UC Davis. These capabilities are shown in the figure below, taken from [a Program Update in March 2011](#).

- PNNL**  
Sr-90 Y-90 generator for cancer therapy
- INL (ATR)**  
Co-60 Gamma knife, sterilization of medical equipment
- Washington Univ.**  
Pending supplier of research isotopes (e.g., Cu-64)
- ORNL**  
HFIR:  
Ge-68 Calibration sources for PET equipment, antibody labeling  
Sr-82 Rb-82 generator for cardiac imaging  
Cu-67 Antibody labeling for targeted cancer therapy  
Stable Isotopes Inventory:  
Top 10 stable isotopes sold over the last 5 years:  
Ca-48, Ga-69, Rb-87, Cl-37, Pb-195, Nd-146, Sm-149, Ru-99, Zr-96  
Radioisotopes Inventory:  
Ac-225 Cancer therapy
- UC Davis**  
Pending supplier of research isotopes (e.g., At-211, Zr-89, Y-86, Pb-203)
- Univ. of Missouri (MURR)**  
Pending supplier of research isotopes (e.g., Ho-166, Lu-177, Sm-153)
- LANL (IPF)**  
Ge-68 Calibration sources for PET equipment, antibody labeling  
Sr-82 Rb-82 generator for cardiac imaging  
As-73 Environmental tracer
- SRNL (Tritium Facility)**  
He-3 Neutron detection

- site has a “look & feel” that is easily changed



- created web pages for each product **generated dynamically** from the **database**



**PRODUCT CATALOG**


### Arsenic-72

Related Products: [Arsenic-73](#)  
[Back](#)

<i>ISOTOPE <sup>72</sup>As</i>	
<b>Half Life / Daughter</b>	26.0 hours to germanium-72
<b>Major Radiation</b>	Positron - 2.49 MeV Gamma - 843.1 keV
<b>Form</b>	Arsenic (V) in 0.1 M HCl
<b>Activity</b>	> 1 mCi/ml (concentration)
<b>Radiopurity</b>	99%
<i>PRODUCTION</i>	
<b>Source</b>	Daughter of selenium-72 decay
<b>Processing</b>	Dissolution, precipitation, and filtration
<i>DISTRIBUTION</i>	
<b>Shipment</b>	Crimp-seal glass vials
<b>Availability</b>	Call
<b>Unit of Sale</b>	Millicuries
<b>Contact</b>	<a href="#">Oak Ridge National Laboratory</a> National Isotope Development Center Call: (865) 574-6984 Fax: (865) 574-6986 email: <a href="mailto:isotopes@ornl.gov">isotopes@ornl.gov</a>

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- pages immediately reflect **any change** in underlying database



**PRODUCT CATALOG**

### Nickel

[Back](#)

Isotope	Natural abundance (atom %)	Isotopic enrichment (atom %)
Ni-58	68.27	>99.9
Ni-60	26.1	>99
Ni-61	1.13	88-93
Ni-62	3.59	>96
Ni-64	0.91	92-96

**PRODUCT FORM**

<b>Inventory Form:</b>	metal powder
<b>Alternate Form:</b>	oxide, chloride

#### Targets

Isotopic or Normal  
Standard Size: 2.5 cm by 2.5 cm

Form	Range of thickness (micrograms/square cm)	Backing	Method of preparation
Element	>= 1000	Self-supporting	Rolling
Element	Variable	Self-supporting	Cast or pressed


**Note:**

Other isotopic abundances, chemical forms, and/or targets considered on request.

<b>Contact</b>	<a href="#">Oak Ridge National Laboratory</a> National Isotope Development Center Call: (865) 574-6984 Fax: (865) 574-6986 email: <a href="mailto:isotopes@ornl.gov">isotopes@ornl.gov</a>
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- built communication protocol between web pages & database
- created list and periodic table interfaces to product catalog

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**PRODUCT CATALOG**

### Product Catalog - Periodic Table

Please click on a purple box to see the products available for that element.  
If you would like an isotope product that is not listed,  
[you can make a request by clicking here.](#)

H																	He				
Li	Be															B	C	N	O	F	Ne
Na	Mg															Al	Si	P	S	Cl	Ar
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr				
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe				
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn				
Fr	Ra	Ac																			
			Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu					
			Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr					

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**PRODUCT CATALOG**

### Product Catalog - Product List

Please select an available isotope product from the lists below.  
If you would like an isotope product that is not listed,  
[you can make a request by clicking here.](#)

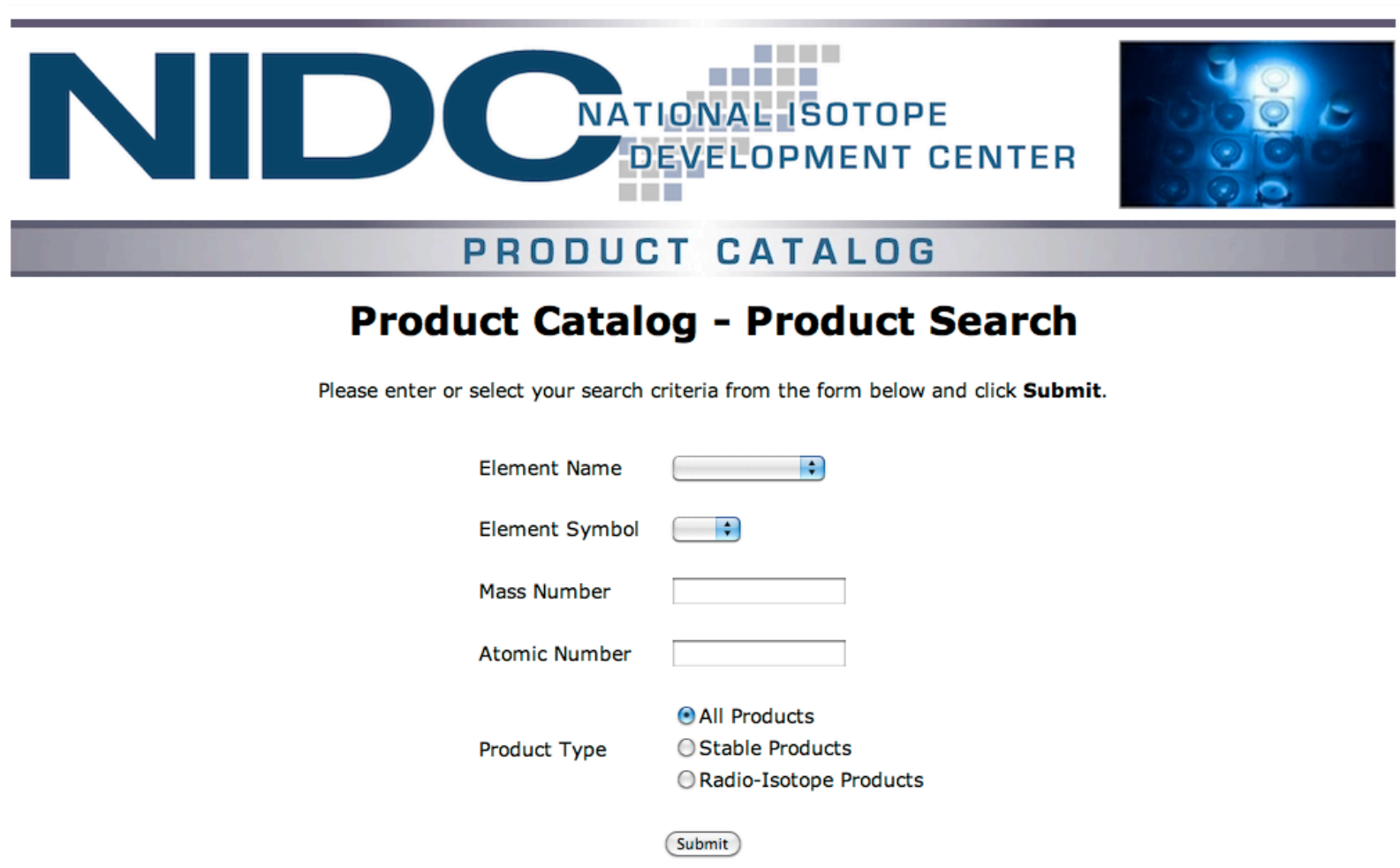
Stable Isotope Products

<a href="#">Antimony</a>	<a href="#">Neodymium</a>
<a href="#">Argon (Alt)</a>	<a href="#">Neon (Alt)</a>
<a href="#">Barium</a>	<a href="#">Nickel</a>
<a href="#">Bromine</a>	<a href="#">Nitrogen (Alt)</a>
<a href="#">Bromine (Alt)</a>	<a href="#">Osmium</a>
<a href="#">Cadmium</a>	<a href="#">Oxygen (Alt)</a>
<a href="#">Calcium</a>	<a href="#">Palladium</a>
<a href="#">Carbon (Alt)</a>	<a href="#">Platinum</a>
<a href="#">Cerium</a>	<a href="#">Potassium</a>
<a href="#">Chlorine</a>	<a href="#">Rhenium</a>
<a href="#">Chlorine (Alt)</a>	<a href="#">Rubidium</a>

Radio-Isotope Products

<a href="#">Actinium-225</a>	<a href="#">Radium-225</a>
<a href="#">Americium-241</a>	<a href="#">Rhenium-186</a>
<a href="#">Americium-243</a>	<a href="#">Rubidium-83</a>
<a href="#">Arsenic-72</a>	<a href="#">Ruthenium-97</a>
<a href="#">Arsenic-73</a>	<a href="#">Samarium-153</a>
<a href="#">Berkelium-249</a>	<a href="#">Selenium-72</a>
<a href="#">Beryllium-7</a>	<a href="#">Selenium-75</a>
<a href="#">Bismuth-207</a>	<a href="#">Silicon-32</a>
<a href="#">Cadmium-109</a>	<a href="#">Sodium-22</a>
<a href="#">Californium-249</a>	<a href="#">Strontium-82</a>

- created simple search capability for product catalog



The screenshot shows the NIDC National Isotope Development Center Product Catalog search page. At the top is the NIDC logo and a header bar with the text 'PRODUCT CATALOG'. Below this is the title 'Product Catalog - Product Search'. A instruction text reads: 'Please enter or select your search criteria from the form below and click **Submit**.' The form contains five input fields: 'Element Name' (a dropdown menu), 'Element Symbol' (a dropdown menu), 'Mass Number' (a text box), 'Atomic Number' (a text box), and 'Product Type' (a radio button group with three options: 'All Products' (selected), 'Stable Products', and 'Radio-Isotope Products'). A 'Submit' button is located at the bottom of the form.

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**PRODUCT CATALOG**

**Product Catalog - Product Search**

Please enter or select your search criteria from the form below and click **Submit**.

Element Name

Element Symbol

Mass Number

Atomic Number

Product Type ☒ All Products  
☐ Stable Products  
☐ Radio-Isotope Products

- **incorporate your feedback**
- **go live** with website when given NIDC approval
- add **request new product** tool
- add **nuclide chart** to select products
- establish first links to info from **National Nuclear Data Center**
- **expand search** capabilities
- **expand** info on NIDC, on Isotopes, on Production Sites